AMENDMENTS TO THE CLAIMS

1-2. (Canceled)

3. (Currently Amended) ~~The~~ A magnetic detection apparatus ~~according to claim 2,~~ comprising:

a processing circuit being arranged apart from a magnetic moving member on a plane thereof, said processing circuit including a bridge circuit comprising a first magnetoelectric conversion element and a second magnetoelectric conversion element; and

a magnet for applying a magnetic field to said first magnetoelectric conversion element and said second magnetoelectric conversion element and also applying a magnetic field to said magnetic moving member in a direction of an axis of rotation of said magnetic moving member;

wherein said second magnetoelectric conversion element is arranged substantially on a center line passing through the center of said magnet on a line in opposition to said magnetic moving member when viewed along the direction of the axis of rotation of said magnetic moving member, so that a differential output can be obtained from the outputs of said first magnetoelectric conversion element and said second magnetoelectric conversion element;

wherein said magnetic moving member comprises a disk-shaped member having teeth formed on its periphery and being movable in a circumferential direction thereof, and

further comprising a magnetic guide arranged between said processing circuit and said magnet and having a pair of projected members in an opposed and spaced relation with respect to each other in the circumferential direction of said magnetic moving member, wherein said second magnetoelectric conversion element is arranged substantially on a center line between said pair of projected members, and said first magnetoelectric conversion element is arranged on a side of one of said pair of projected members.

4. (Original) The magnetic detection apparatus according to claim 3, wherein said processing circuit further includes a bridge circuit comprising a third magnetoelectric conversion element and a fourth magnetoelectric conversion element, said third magnetoelectric conversion element being arranged substantially on a center line between said pair of projected members, said fourth magnetoelectric conversion element being arranged on a side of the other one of said pair of projected members, so that a differential output is obtained from an output at a midpoint between said first magnetoelectric conversion element and said second magnetoelectric conversion element and from an output at a midpoint between said third magnetoelectric conversion element and said fourth magnetoelectric conversion element.

5. (Currently Amended) The magnetic detection apparatus according to claim 4, wherein an opposing distance of a peripheral surface of each of said teeth to said first magnetoelectric conversion element and said ~~third~~ fourth magnetoelectric conversion element is adjusted in relation to an opposing distance of the peripheral surface of each of said teeth to said second magnetoelectric conversion element and said ~~fourth~~ third magnetoelectric conversion element.

6. (Currently Amended) The magnetic detection apparatus according to claim 4, wherein a circumferential distance between said first magnetoelectric conversion element and said ~~fourth~~ second magnetoelectric conversion element is adjusted in relation to a circumferential distance between said ~~second~~ third magnetoelectric conversion element and said ~~third~~ fourth magnetoelectric conversion element.

7. (Original) The magnetic detection apparatus according to claim 4, wherein an opposing distance between said opposed projected members is adjusted in relation to a circumferential distance between said first magnetoelectric conversion element and said second magnetoelectric conversion element and a circumferential distance between said third magnetoelectric conversion element and said fourth magnetoelectric conversion element.

8. (Currently Amended) The magnetic detection apparatus according to claim 4, wherein said processing circuit further includes a differential flip-flop circuit for detecting the direction of rotation of said magnetic moving object from an output at a midpoint between said first ~~magnetoresistive segment~~ magnetoelectric conversion element and said second ~~magnetoresistive segment~~ magnetoelectric conversion element and an output at a midpoint between said third ~~magnetoresistive segment~~ magnetoelectric conversion element and said fourth ~~magnetoresistive segment~~ magnetoelectric conversion element.

9. (Currently Amended) The magnetic detection apparatus according to claim 3 [[1]], wherein each of said first and second magnetoelectric conversion elements comprises a giant magnetoresistive element (GMR element).

10. (New) The magnetic detection apparatus according to claim 6, wherein the distance between said first magnetoelectric conversion element and said second magneto electric conversion element, as well as the distance between said third magnetoelectric conversion element and said further magnetoelectric conversion element, is within a range of 1.5 mm to 3 mm.

11. (New) The magnetic detection apparatus according to claim 5, wherein the opposing distance of a peripheral surface of each of said teeth to said first magnetoelectric conversion element and said further magnetoelectric conversion element is larger than the opposing distance of the peripheral surface of each of said teeth to said second magnetoelectric conversion element and said third magnetoelectric conversion element.

12. (New) The magnetic detection apparatus according to claim 11, wherein the opposing distance of a peripheral surface of each of said teeth to said first magnetoelectric conversion element and said further magnetoelectric conversion element is larger, by 0.1 mm, than the opposing distance of the peripheral surface of each of said teeth to said second magnetoelectric conversion element and said third magnetoelectric conversion element.

13. (New) A magnetic detection apparatus comprising:

a processing circuit being arranged apart from a magnetic moving member on a plane thereof, said processing circuit including a bridge circuit comprising a first magnetoelectric conversion element and a second magnetoelectric conversion element; and

a magnet for applying a magnetic field to said first magnetoelectric conversion element and said second magnetoelectric conversion element and also applying a magnetic field to said magnetic moving member in a direction of an axis of rotation of said magnetic moving member;

wherein said second magnetoelectric conversion element is arranged substantially on a center line passing through the center of said magnet on a line in opposition to said magnetic moving member when viewed along the direction of the axis of rotation of said magnetic moving member, so that a differential output can be obtained from the outputs of said first magnetoelectric conversion element and said second magnetoelectric conversion element,

wherein said processing circuit further includes a bridge circuit comprising a third magnetoelectric conversion element and a fourth magnetoelectric conversion element, said third magnetoelectric conversion element is arranged substantially on the center line passing through the center of said magnet, said fourth magnetoelectric conversion element being arranged on a side of the center line opposite that on which the first magnetoelectric conversion element is disposed, so that a differential output is obtained from an output at a midpoint between said first magnetoelectric conversion element and said second magnetoelectric conversion element and from an output at a midpoint between said third magnetoelectric conversion element and said fourth magnetoelectric conversion element,

wherein an opposing distance of a peripheral surface of each of said teeth to said first magnetoelectric conversion element and said fourth magnetoelectric conversion element is adjusted in relation to an opposing distance of the peripheral surface of each of said teeth to said second magnetoelectric conversion element and said third magnetoelectric conversion element.

14. (New) The magnetic detection apparatus according to claim 13, wherein the opposing distance of a peripheral surface of each of said teeth to said first magnetoelectric conversion element and said further magnetoelectric conversion element is larger than the opposing distance of the peripheral surface of each of said teeth to said second magnetoelectric conversion element and said third magnetoelectric conversion element.

15. (New) The magnetic detection apparatus according to claim 14, wherein the opposing distance of a peripheral surface of each of said teeth to said first magnetoelectric conversion element and said further magnetoelectric conversion element is larger, by 0.1 mm, than the opposing distance of the peripheral surface of each of said teeth to said second magnetoelectric conversion element and said third magnetoelectric conversion element.

16. (New) A magnetic detection apparatus comprising:

a processing circuit being arranged apart from a magnetic moving member on a plane thereof, said processing circuit including a bridge circuit comprising a first magnetoelectric conversion element and a second magnetoelectric conversion element; and

a magnet for applying a magnetic field to said first magnetoelectric conversion element and said second magnetoelectric conversion element and also applying a magnetic field to said magnetic moving member in a direction of an axis of rotation of said magnetic moving member;

wherein said second magnetoelectric conversion element is arranged substantially on a center line passing through the center of said magnet on a line in opposition to said magnetic moving member when viewed along the direction of the axis of rotation of said magnetic moving member, so that a differential output can be obtained from the outputs of said first magnetoelectric conversion element and said second magnetoelectric conversion element,

wherein said processing circuit further includes a bridge circuit comprising a third magnetoelectric conversion element and a fourth magnetoelectric conversion element, said third magnetoelectric conversion element is arranged substantially on the center line passing through the center of said magnet, said fourth magnetoelectric conversion element being arranged on a side of the center line opposite that on which the first magnetoelectric conversion element is

disposed, so that a differential output is obtained from an output at a midpoint between said first magnetoelectric conversion element and said second magnetoelectric conversion element and from an output at a midpoint between said third magnetoelectric conversion element and said fourth magnetoelectric conversion element,

wherein a circumferential distance between said first magnetoelectric conversion element and said second magnetoelectric conversion element is adjusted in relation to a circumferential distance between said third magnetoelectric conversion element and said fourth magnetoelectric conversion element.

17. (New) The magnetic detection apparatus according to claim 16, wherein the distance between said first magnetoelectric conversion element and said second magneto electric conversion element, as well as the distance between said third magnetoelectric conversion element and said further magnetoelectric conversion element, is within a range of 1.5 mm to 3 mm.